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TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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**Declaration under Rule 4.17:**

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/04740

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : E21B 19/16, 17/02, 29/00

US CL : 166/380, 242.1, 242.6, 206, 207; 285/333, 334, 382.1, 53

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 166/380, 242.1, 242.6, 206, 207; 285/333, 334, 53, 382.1, 382.4

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,263,968 B1 (FREEMAN et al) 24 July 2001 (24.07.2001), Fig. 9B, column 2, lines 51-64, column 10, line 4 through column 11, line 15.	14, 16, 25, and 27
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Y		1-13, 15, 17-24, 26, 28-46, 48, 49, 51-58, 66-85
Y	US 4,854,338 A (GRANTHAM) 08 August 1989 (08.08.1989), Figs. 3-4, column 6, lines 25-31.	1-13, 15, 22-24, 26, 56, 57, 66, 77, and 80
Y	US 5,031,370 A (JEWETT) 16 July 1991 (16.07.1991), Fig. 8 and claim 11.	17-20, 28-31, and 83
Y	US 4,401,325 A (TSUCHIYA et al) 30 August 1983 (30.08.1983), Figs. 2-4, column 2, line 52 through column 3, line 2; column 3, line 34 through column 4, line 13.	21, 32, 58, 61, 66-73, 75, 76, 78, 79, 81, 82, 84, and 85
Y	US 5,931,511 A (DELANGE et al) 03 August 1999 (03.08.1999), Figs. 1-1A.	33-44
Y	US 4,917,409 A (REEVES) 17 April 1990 (17.04.1990), Figs. 3-6.	53-55, 80, and 83

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

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Date of the actual completion of the international search

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